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In the next place, The University keeps in touch with the examinations and is able to give the benefit of its experience and of its standards to the teachers in the schools. This is thought to be of large importance in order to unify the system of examinations in different schools and in order to keep them up to a high standard. At the same time if The University should prepare its examinations independently of the schools the disadvantage is at once incurred of making questions which are not in all respects adapted to every class in schools in different parts of the country. It is thought that the teacher who has conducted a class is, after all, the proper person to prepare a just examination and, if that examination is revised by The University authorities, it would seem that all reasonable needs are secured.

It ought to be added that The University still retains a system of examinations of its own both in the quadrangles, and in other cities. This is for the benefit of students who are not connected with any of The University affiliated schools or with any of the coöperating schools, and any student who shows himself qualified on these examinations can enter The University.

The relation between The University and the coöperating schools will be made still closer by the fact that to each school is assigned a member of the faculty as a school counselor. He will be expected to visit the school from time to time—to make such inspection as may seem advisable—and to represent the school before The University Board of Affiliations on the one hand, and on the other hand, of course, to represent The University with the school officers. By his keeping, in this way, in constant touch with what is going on between the two institutions, it is hoped that both will be benefited.

THE EXAMINATION SYSTEM OF ADMISSION TO COLLEGE.

PROFESSOR CLIFFORD H. MOORE, UNIVERSITY OF CHICAGO.

Before we consider entrance examinations as a means of determining the fitness of a candidate for matriculation in college, it may not be amiss for me to say a few words as to my

conception of the proper nature and purpose of examinations in general.

We shall agree, I think, that examinations for students in our high schools should be of a character to test the power as well as the knowledge of the students examined. An examination that tests the memory alone by requiring only a statement of knowledge previously acquired, and does not test the student's ability to apply the knowledge he has gained to the solution of new problems, we must regard as insufficient and undesirable. An examination that taxes only the memory is a proper test for the young child whose mnemonic faculties are strong, while his ability to apply and to form conclusions is weak; but from youth of fourteen to twenty years, in whom the ability to reason, if properly trained, has been somewhat highly developed, we must require the additional test of power to use knowledge.

An examination in geometry that requires of the student that he shall prove again theorems already familiar to him, will test his memory, but furnish very little evidence as to the extent of his mental development and real education. Many of us know how possible it is that a student should be able to make a fair showing when examined on a specified amount of text of a Latin, or a Greek, or a modern author, without possessing any real ability to use the language he has studied; his weakness appears as soon as a sight passage is set before him. But when a student has shown on examination his ability to solve problems previously untried, to prove "original" propositions, or to make an exact translation of a new passage in a foreign language, he has shown that in some lines at least, he has gained a fair equipment of facts, but more than that, he has had developed in him what is of supreme importance, the ability to use his facts; in short, that in so far as he possesses this power of which we speak, he is educated. The facts he has learned may pass, probably will pass from his memory; but the power he has gained, if exercised, is his permanent possession to be turned in any direction he will.

Holding this view as to the purpose of examinations, we shall then plan them to test the extent of our student's ability to use

his knowledge; therefore our examinations in foreign languages will be generally at sight; in mathematics the student will be expected not only to perform fundamental mathematical processes but also to solve problems previously untried; and in the sciences his skill in manipulation, accuracy of observation, and ability to approach new problems successfully will be tested quite as much as the facts of science he has learned in previous study.

One of the strongest reasons to my mind for advocating the cause of examinations in general, and especially entrance examinations, is not simply my confidence in them as adequate tests of a student's knowledge and ability, but my well established belief in the educational discipline furnished by examinations. Every professional man, and I suppose every business man as well, is frequently obliged to make an intelligent presentation on application of his knowledge on one or more subjects within a short space of time; this test is parallel in kind to that to which we require a pupil to submit when we set him an examination: he is to present in a satisfactory manner within a specified time all he knows upon the points indicated. This is valuable and "practical" discipline, and, in my opinion, a means of training that we cannot afford to let go unused. If it be claimed that examinations, and especially entrance examinations, are severe tests, I shall answer that I hope they are—always within reasonable limits. Of the severity of examinations, however, I shall speak later. The simple fact is that to acquire a sound basis of education is a serious matter that calls for strenuous effort. We must face this fact and teach our pupils to face it. There is no absolutely easy road to excellence.

In all that I have to say this afternoon, I trust no one will think that I wish examinations exalted to become ends in themselves. It certainly would be a cause for regret if examinations should become more than valuable incidents marking the stages of a student's progress.

Yet while the majority—perhaps a large majority—of us will agree as to the purpose and character of entrance examinations, if

examinations are to be used to determine a student's fitness to enjoy college opportunities, and while many will give a more or less qualified assent to what I have said as to the educational value of examinations, I am aware that many will not keep company with me longer when I claim that entrance examinations, as conducted by the leading institutions in the country, are an adequate and satisfactory means of determining the qualifications of candidates, and that under existing circumstances are the safest and most satisfactory means we possess.

We are all aware that secondary education in this country is far from being homogeneous; standards of scholarship and educational ideals vary very widely. Not only is this true of the country as a whole, but in any district of moderate area there will be found existing great differences of standard and varieties of educational notions. And a college that draws from any area save the smallest, must reckon with these differences of standard. Now Harvard and Yale, to take these colleges as types, show clearly by their printed examination papers, extending over a series of years, as well as by other publications, what their admission requirements are. Yet in spite of all the educational work Harvard and Yale can do in these ways, considerable numbers of applicants appear each year for examination who have been led by their instructors to believe that they are ready, when in reality one, and not infrequently two, years of preparatory work is necessary. In such cases the difficulty arises from the fact that the instructor has not the proper educational standard by which to measure his pupil, yet without the check the examination furnishes, the pupil might have been admitted on his instructor's certificate to meet, very likely, disaster in his first college year. Under the examination system the college is saved the burden of a student who is unprepared to do his work, and the student is spared the disappointment and discouragement incident to failure to maintain himself in college, as well as the loss of time. By entrance examinations one standard is applied to all candidates for admission, and it is fairly certain that all successful candidates have met a fixed minimum requirement. Of course, one

must acknowledge that this minimum requirement in some subjects is occasionally absurdly small. Under the certificate system, however, after all vigilance on the part of the college, and every honest intention on the part of the teacher in the secondary school, it is inevitable there should be a greater variety of attainments among students lately entered than if admitted by examination. It is not to the point to urge against the examination plan that the ability of those students who are admitted to any particular college on certificate is distinctly higher than that of those admitted to the same institution on examination, for wherever the certificate system is used a large number of the students admitted by examination consists of those whose school rank has been so low that they have failed to obtain certificates from their instructors.

Let us examine here some of the objections made to entrance examinations. Three common charges are (*a*) that the test furnished by examinations is inadequate, (*b*) that it is often unfair, (*c*) that it is usually made under strange and therefore unfavorable surroundings, and is too severe.

Before taking up these charges let me say in parenthesis, that in my opinion no student should be admitted to an entrance examination until his principal instructor, or the proper school authority, has certified that he considers the student in question prepared to meet the examination he proposes to try. This certificate as used by many colleges is of weight, and is a valuable protection to the colleges, and the schools alike.

To return to the charges. It is very true that no student who is adequately prepared for college, can show the sum of his attainments in a given line within the one or two hours allotted him in the examination room. But the purpose of the examination is not to force the student to lay before us all his mental wares, but rather to give him an opportunity to produce samples that thereby we may judge his entire stock. The student must be prepared to exhibit a portion of his knowledge within the general field on which he is examined, and in as much as the particular parts of the whole subject on which he is to be tested are

not known to him previous to the examination, we may reasonably decide that if he acquits himself well on the questions asked, he is moderately equipped with knowledge of the whole subject.

It is not to be denied that occasionally examinations call for information that the applicants for admission cannot be expected to give. Yet after supplementing my own experience with the longer experience of others, I feel confident that entrance examinations are seldom too exacting in their demands; indeed, it is not an unknown thing for colleges to receive complaints that their examinations are too easy. While smarting under the sting of their pupils' failures, teachers sometimes cry out that this or that examination was unfair; but in the majority of cases a cool and calm review of the matter will cause a revision of the hasty judgment. On this point in general I wish to quote from a letter written me by Dr. Bancroft, principal of Phillips Academy, at Andover, Mass. This testimony is valuable as Dr. Bancroft has had probably more experience in sending boys to college and to higher technical schools than any other man in the United States. He writes: "The modern methods of setting examination papers, of examining and estimating them, of recording and announcing the results, are such that mistakes are few in number, and real injustice of any magnitude is rare. As a rule the right men are conditioned, and in the right subjects, and the right men are passed, and the right credits are given."

Owing to the division of entrance examinations into preliminary and final it is rare that a student, unless he takes all his examinations at once, is obliged to be in the examination room more than four hours a day at the most, and these hours not consecutive. Surely this is not oppressive to a healthy boy or girl who is properly prepared. The local examinations make it seldom necessary for an applicant to take a long journey to the place of examination.

It is true that at times students fail to do themselves justice on examination. This failure may result from the physical condition of the student, but my experience has shown me that far more often it is caused by neglect on the part of the teacher to

train his pupil for the examination. The experience of many teachers has shown that the great majority of boys and girls, if equipped with the necessary knowledge, can easily be trained to face an examination without nervousness, and to do themselves justice on it. But you say that this means that the teacher is to devote his energies to preparing his pupils for examinations. It is to be hoped he will, by all means, but to preparing them so broadly that they will be able to meet a fair examination on any portion of the subject in hand, so far as it is included in the school curriculum. If a teacher does this he teaches well.

Every teacher, who has prepared pupils for entrance examinations, knows how valuable the prospective examinations are in spurring the student to acquire, and the teacher to impart, definite knowledge rather than nebulous information, which, when wanted, often proves elusive. The student soon learns that his knowledge must be concrete, and the wise teacher sees that his pupil's equipment is broad enough and that his wits are sufficiently trained to meet the test.

It is further urged that entrance examinations restrict school programmes. With the alternatives now allowed by most institutions it is still hard to see how any school programme can be seriously injured; and every means is to be welcomed that tends to secure greater concentration of effort in some of our schools.

The advocates of the certificate plan claim that as rigid standards are applied under it as by the examination plan, and furthermore that a strong influence is exerted directly on schools by the visitations from the college. As to this second point I think there cannot be two opinions; every contact between school and college teacher is valuable to both, but the visitation of schools is not peculiar to the certificate system. As to the other point, I believe I am not wrong in saying that even at the University of Michigan, where the certificate system is perhaps most successful, there have been found certain difficulties in securing adequate supervision over all accredited schools. It is impossible for the teaching staff of the University to make the number of visits necessary, especially to schools at a distance.

It is stated also that the certificate plan improves the quality of work done in schools, and encourages teachers to prepare for college, in a way in which examinations do not. I have never been able to learn how this is done, if there be no change in the standard fixed for admission. When we examine the matter, we find that no school is accredited until the college authorities are convinced that its standard is satisfactory; up to that time all applicants are required to submit to examination. In other words, the standard is tested, in part at least, by examination, and a school is not accredited until proof has been given that its graduates can meet the examination test. Furthermore, I claim that the standards for admission to college are largely maintained by entrance examinations. We do not know, even here in the West where the certificate system is familiar, what would be the result if all the higher institutions should resort to certificates. Harvard and Yale preëminently, from the prestige their high position and age have given them, and by means of their graduates scattered through the country, have had in the past and still have great weight in determining standards of college education. And it is also true, in my opinion, that the varying standards of admission requirements are measured chiefly by the requirements of these two older institutions, which have rigidly maintained entrance examinations, and by means of entrance examinations have raised the standard of admission to college for the entire country. The institutions that admit by certificate have neither set, nor do they at present maintain, standards for the country at large. This is not necessarily equivalent to saying that their standards are lower than those of the colleges that admit on examination only; that question is foreign to the present discussion.

There is a widespread belief that the certificate plan is welcome to teachers as a relief from the examination system. We are told that the privilege of certifying pupils carries with it added responsibility and greater dignity for the teacher. Yet many of the best secondary teachers are opposed to the certificate plan and decline to use it. They feel that far more credit comes to them and to their schools from their students' successes in meet-

ing the uniform test of examinations than comes from permission to send pupils to college without examination. If Harvard, Yale, Princeton, The University of Chicago, and other institutions should adopt the certificate plan, these teachers would still decline to use it. The success of pupils on entrance examinations is a current stamp of approval on the teacher's work that the teacher values highly. And teachers are not moved in this matter by personal interests alone. They favor entrance examinations because they believe that the gain to the student is great; aside from other considerations the pupil's energies are concentrated and his work is made more definite.

It is impossible at present to compare the old system of entrance examinations with the new plan recently adopted by this university, for this new plan has not been working long enough for us to decide on its virtues and defects. Yet certain difficulties may be foreseen. It will hardly be easier for the university to supervise the examinations and read the papers than it is for other institutions to keep guard over the certificate plan; and we may reasonably fear certain weaknesses in the plan connected with the secondary school.

Before I close, let me say that while I thoroughly believe in the old examination system, I recognize that state universities are in a somewhat different position from that occupied by endowed institutions. A state university is an integral part of the school system of the state, and there are very strong reasons why it should admit without examination graduates from the high schools of the state. For state universities, then, the certificate system may be well, if confined to their individual states. Endowed colleges are not compelled to bear such relations to the schools from which their pupils come.

But even if I grant this, I must still repeat the claims I have been trying to support in favor of the old examination system, Under existing conditions, and when well administered, it furnishes a test that is approximately uniform, is adequate, not too severe, and, to my mind at least, superior to any other method yet devised.

These papers were discussed, by appointment, as follows :

PRINCIPAL WILLIAM A. GREESON, GRAND RAPIDS CENTRAL HIGH SCHOOL.

During the first years of my experience in the Grand Rapids High School, a pupil who had a diploma showing that he had completed a regular course of the school was admitted into the University as a candidate for the corresponding degree. It soon became apparent, however, that some pupils of moderate intellectual equipment could, by repeating certain studies in the high school, complete a course satisfactorily. There were honest, faithful, conscientious boys and girls who plainly showed that they had almost reached the limit of their capacity, and who might be tempted to go to the University because they could be admitted without examination, although such a course would be unprofitable to them. They had fairly earned the honor of graduation from the high school, and yet a diploma could not be granted them if they might go to the University, where they would inevitably fail.

To guard against this, the authorities of the University were asked not to accept a diploma unless it had the written recommendation of the principal. Similar experiences, I understand, led other schools to adopt some method of distinguishing graduates as recommended and not recommended students.

Finally, two or three years ago, the University issued a blank certificate to be filled out by the principal for each candidate for admission, stating the studies pursued, the standing in each, with a recommendation that he be admitted to the University. Thus the University of Michigan admits now by certificate rather than by diploma.

As the school grew larger and the number of graduates increased, greater care had to be exercised in determining who should be recommended, that justice might be done to each. Last year in May, a list of the candidates for graduation was given to each teacher in the school, and they were asked to mark each name "A," "B," or "C;" "A" signifying an excellent student, worthy to be recommended to the University, "B," fairly good, not strong enough, however, to deserve a recommendation, "C," "passable" or poor in one or two subjects. This decision was to be given not from the recorded marks, but from the teacher's knowledge of the pupil, based on observation